



# STEEL

## Best Practices Project Case Study

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OFFICE OF INDUSTRIAL TECHNOLOGIES

ENERGY EFFICIENCY AND RENEWABLE ENERGY, U.S. DEPARTMENT OF ENERGY

### BENEFITS

- Completed 40 energy-saving projects
- Saves over \$2 million annually
- Continuing efforts with 18 active projects

### APPLICATIONS

Almost any industrial company can benefit from the formation of an energy team. In many cases, projects identified and implemented by energy teams will not only result

## ENERGY TEAM PURSUES A WIDE RANGE OF PROJECTS TO IMPROVE OPERATIONS AT A STEEL PLANT

### Summary

In 1998, staff at U.S. Steel's (USS) Edgar Thomson Plant in Braddock, Pennsylvania, formed an Energy Optimization Business Unit Team. The energy team is responsible for identifying and implementing projects that save energy and improve the performance of the plant's operations. Since the team's formation, a total of forty projects have been completed with an estimated total annual savings of about \$2 million. Eighteen additional projects are currently underway. Because of the success of this energy team, a new team has been formed at USS's Irvin Plant.

### Company Background

U.S. Steel Group (USS) is part of USX Corporation, which is headquartered in Pittsburgh, Pennsylvania. USX is a major worldwide producer of oil and natural gas, and is also the nation's largest producer of steel products. The USS subsidiary manufactures a wide variety of steel products, coke, and taconite pellets.

The Mon Valley Works, comprised of the Edgar Thomson Plant in Braddock and the Irvin Plant in West Mifflin, is an integrated steel making facility, converting iron ore into steel and a variety of sheet steel products.

### EDGAR THOMSON PLANT



## The Energy Team

When USS first formed the energy team at their Edgar Thomson plant in 1998, they used an outside consultant to identify projects and lead the meetings where projects were discussed. USS soon decided their internal team had all the skills required to recognize opportunities and implement projects, so the decision was made to go forward without the consultant.

Team members who work in various areas of the plant are responsible for identifying potential opportunities for energy savings. Some projects start out as investigations but are never implemented, because they are found to not be cost effective. Edgar Thomson pays for the projects using funds from the specific areas of the plant where the projects are implemented.

At biweekly energy team meetings, leaders of each project give a status report, and then a technical discussion frequently follows. A spreadsheet of completed projects, active projects, and "reminders" is used as a framework for the meetings.

## Typical Projects

The energy team has implemented a wide variety of energy-saving projects on different systems in the plant. Example projects include:

- Modifying natural gas pilots on boilers,
- Insulating steam lines,
- Repairing steam traps,
- Recovering condensate, and
- Repairing leaks in compressed air systems.

## Results

A total of forty projects have been completed, with an estimated total annual savings of at least \$2 million. Eighteen additional projects are currently underway in this on going effort. Most projects have been very successful and have resulted in quick paybacks. USS plans to form additional energy teams at other plants.

### GAS PILOT TIPS



## INDUSTRY OF THE FUTURE—STEEL

Through OIT's Industries of the Future initiative, the Steel Association, on behalf of the steel industry, has partnered with the U.S. Department of Energy (DOE) to spur technological innovations that will reduce energy consumption, pollution, and production costs. In March 1996, the industry outlined its vision for maintaining and building its competitive position in the world market in the document, *The Re-emergent Steel Industry: Industry/Government Partnerships for the Future*.

**OIT Steel Industry Team Leader: Scott Richlen (202) 586-2078**



BestPractices is part of the Office of Industrial Technologies' (OIT's) Industries of the Future strategy, which helps the country's most energy-intensive industries improve their competitiveness. BestPractices brings together the best-available and emerging technologies and practices to help companies begin improving energy efficiency, environmental performance, and productivity right now.

BestPractices focuses on plant systems, where significant efficiency improvements and savings can be achieved. Industry gains easy access to near-term and long-term solutions for improving the performance of motor, steam, compressed air, and process heating systems. In addition, the Industrial Assessment Centers provide comprehensive industrial energy evaluations to small and medium-size manufacturers.

### PROJECT PARTNERS

U.S. Steel  
Pittsburgh, PA

### FOR ADDITIONAL INFORMATION, PLEASE CONTACT:

OIT Clearinghouse  
Phone: (800) 862-2086  
Fax: (360) 586-8303  
clearinghouse@ee.doe.gov

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[www.oit.doe.gov](http://www.oit.doe.gov)

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questions, or suggestions to  
[webmaster.oit@ee.doe.gov](mailto:webmaster.oit@ee.doe.gov)

Office of Industrial Technologies  
Energy Efficiency  
and Renewable Energy, EE-20  
U.S. Department of Energy  
Washington, D.C. 20585



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